



Current Problems and Methods For Prevention of Allergic Pathology in Children

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Abstract: Due to the significant prevalence of allergic diseases in children, the problem of prevention of allergic pathology is of great relevance. Allergic diseases based on IgE-mediated inflammation have a common pathogenetic nature and, therefore, common principles of prevention and treatment. Primary and secondary prevention of allergic reactions and diseases is an important area for reducing allergic morbidity in children and adolescents. It is carried out in children at risk of allergic pathology. However, preventive measures in "risk families" should be started before the birth of the child, optimally at the stage of pregnancy planning.

Key words: allergy, prevention, children, bronchial asthma

Introduction. In recent decades is one of the most urgent problems of pulmonology, with a constant increase in the number of patients, among adults and children. The data of epidemiological studies in recent years indicate an increase in the prevalence of AD in pregnant women, the frequency of which ranges from 1 to 13.8%. In the conditions of modern society, pregnancy is formed against the background of environmental and socio-economic instability, westernisation of life, which is further aggravated by the presence of bronchial asthma in patients, in connection with which the peculiarities of its course in pregnant women at the present stage are observed. According to the data of retrospective studies, in one third of patients the course of BA in the gestational period worsens, in one third - becomes less severe, in one third - does not change. And although some researchers have noted a predominant improvement in the course of AD during pregnancy, most authors consider pregnancy and AD as mutually influential conditions, with unfavourable course of which there is a mutual aggravation. The

ANS plays an integrating role in the implementation of adaptation mechanisms to the gestational period, creating conditions for the normal course of pregnancy and foetus carrying. It is known that nonspecific reactions of short-term adaptation, replaced by long-term changes in the respiratory, cardiovascular and other systems of the mother's body, as well as in the forming foetoplacental complex, occur already in the first 3 trimesters of pregnancy, affecting the development of the foetus, the state of health of the newborn. A vicious circle is created: sick mother - sick child - sick adolescent - sick mother. Pathology of the foetus and newborn predetermines both the postnatal development of the child and adult health. When developing preventive measures to reduce the risk of allergy development in offspring, it is necessary to know the peculiarities of the course of AD in the mother during pregnancy. Clinical course of AD in patients during pregnancy According to our data, in 62.1% of the examined pregnant women, mild AD (BALT) prevailed, in 30.6% - moderate (BAST), in 8.3% - severe (BATT), which reflects the general structure of the distribution of AD by severity in the population. Hereditary aggravation by allergic diseases was traced in 40.7% of patients, with bronchial asthma in 35.5%, including 59.2% on the maternal side. Since AD is a multifactorial disease, the realisation of clinical symptoms may occur at any age period. The occurrence of the first attacks of suffocation in childhood was noted by 33.4% of pregnant women, in the pre- and pubertal period (11-19 years) - 30.7% of patients, in the period of reproductive activity (20-30 years) - 20.7% of women, over 30 years - 2.1% of patients. Allergic form of AD was diagnosed in 62.4% of patients, 10.4% - non-allergic, 27.2% - mixed. The predominant causative allergens were: household allergens - in 52.8% of patients, pollen allergens - in 43.1%, food allergens - in 21.4%, epidermal allergens - in 19.3%. A high percentage of drug allergy was noted in 41.7%, in the structure of which antibacterial drugs and vitamins occupied the leading places. Polyvalent sensitisation to several groups of allergens was detected in the majority of patients (74.1%). Unfavourable environmental conditions, infectious-viral diseases, passive smoking and many other provoking factors undoubtedly contribute to the increase in the incidence of atopic diseases, but cannot definitively explain the causes of this phenomenon. The results of numerous genetic studies explain the role of certain genes and hereditary predisposition in the development of atopic process. However, the short time period over which the spike in allergic morbidity has occurred indicates the central role of a complex interaction between environmental factors and hereditary predisposition. Moreover, most environmental factors determine the development of atopy in the prenatal and early childhood period.

The theory of multifactorial inheritance of allergic diseases, including bronchial asthma, formed in the 50-60s of the XX century and defined as the interaction of environmental and hereditary factors, has now been further developed in a detailed consideration of the origins of allergy formation in the child. Given the important role of hereditary predisposition, children born into families with atopic diseases deserve special attention.

It is currently believed that atopic allergy is characterised by an imbalance in the activation of different types of T cells and, as a consequence, increased synthesis of IgE. In humans, type 1 T-helper cells (1) are characterised by the ability to produce interferon (IFN- γ) in addition to other cytokines. 2 cells produce other cytokines, notably interleukin-4 (IL-4), IL-5 and IL-13. Atopic disease is characterised by an imbalance between these cytokines, in that Th2-type cytokines are produced in higher concentrations than 1 -type cytokines. Regarding the development of allergy in the intrauterine

period, it is important to note that the intrauterine environment deviates towards the Λ^2 phenotype and allergic sensitisation can occur already in utero. The imbalance between Λ^1 and Λ^2 production observed already in early childhood can persist. The very first months of a child's life are therefore considered to be crucial with regard to the development of allergy. Exposure to various environmental factors in early childhood, which may have the ability to alter the balance of cytokines towards Th2 cells, has been attributed to a number of epidemiological phenomena (differences in the prevalence of allergic diseases between East and West, urban and rural, rich and poor, etc.) and is the subject of close study by many researchers at present.

Children born in "allergic" families have a higher risk of bronchial asthma and other atopic diseases from an early age. Therefore, in order to prevent the development of atopy, a programme of dispensary monitoring of pregnant women and children at high risk of allergy is necessary. Early diagnosis and timely complex of adequate treatment and preventive measures can reduce the risk of allergy development in the child, reduce the number of severe forms of allergic diseases, as well as reduce the economic costs of their treatment.

Measures to prevent the formation of atopy phenotype in the child are prevention of intrauterine sensitisation of the foetus, prevention of respiratory infections in the mother during pregnancy, limitation of drug exposure during pregnancy, improvement of the external environment, improvement of the ecological situation in the home, prevention of passive smoking, struggle for breastfeeding, and in the absence of milk from the mother - the prescription of artificial mixtures with partial protein hydrolysis, use of methods of physical rehabilitation and hardening.

However, the view on some preventive measures has changed in recent years. For example, it was noted that in large families where children had frequent respiratory infections, the incidence of allergic diseases was lower than among children who were rarely ill. These observations were developed in the so-called "hygienic theory", which explains this phenomenon by insufficient "training" of the TH1 response in rarely ill children. In addition, it has been shown that the prescription of a strict hypoallergenic diet to pregnant women does not reduce the risk of allergic diseases in their child, while the adherence to a hypoallergenic diet during lactation by the mother of a child at risk can reduce the likelihood of disease development.

Conclusions: Thus, the problem of prevention of allergic pathology in children is of high relevance. Primary and secondary prevention of allergic diseases is an important direction of reducing allergic morbidity in children and adolescents, primarily those at high risk of allergy formation. Timely and adequate prevention and treatment of children with allergic diseases or at risk of developing them significantly reduces the likelihood of an "allergic march".

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